

VZCZCXRO3718
RR RUEHRG
DE RUEHBR #1354/01 2841953
ZNR UUUUU ZZH
R 101953Z OCT 08
FM AMEMBASSY BRASILIA
TO RUEHC/SECSTATE WASHDC 2648
INFO RUEHRI/AMCONSUL RIO DE JANEIRO 6744
RUEHSO/AMCONSUL SAO PAULO 2906
RUEHRG/AMCONSUL RECIFE 8580
RUEHUNV/USMISSION UNVIE VIENNA 0124
RHEBAAA/DEPT OF ENERGY WASHDC

UNCLAS SECTION 01 OF 03 BRASILIA 001354

SENSITIVE

SIPDIS

E.O. 12958: N/A

TAGS: [ENRG](#) [TRGY](#) [KNNP](#) [IAEA](#) [BR](#)

SUBJECT: BRAZIL: UPDATE ON BRAZIL'S AMBITIOUS CIVIL NUCLEAR ENERGY PROGRAM

11. (U) THIS CABLE IS SENSITIVE BUT UNCLASSIFIED AND NOT FOR INTERNET DISTRIBUTION.

12. (SBU) SUMMARY. The Government of Brazil (GOB) has ambitious plans for Brazil's nuclear renaissance. It intends to complete construction of its third nuclear power plant (Angra 3) located near Rio de Janeiro and to construct an additional four to eight reactors by 2014 in order to keep up with domestic demand. Deputy Minister of Mines and Energy Marcio Zimmermann said that Brazil wants American involvement in building the new plants. There is an active discussion about additional reactors coming on line after 2014. In addition, the GOB is seeking to establish the capability and capacity to produce nuclear fuel for domestic consumption. The GOB is also considering the creation of a separate state-entity to monitor and regulate nuclear energy. Further, the GOB is already grappling with the issue of the disposition of nuclear waste, which will become more severe with additional reactors. END SUMMARY.

BUILDING MORE REACTORS

13. (SBU) Brazil currently has two nuclear power plants, Angra 1 and Angra 2, located at Angra dos Reis in the State of Rio de Janeiro. These two reactors generate a combined 1,900 megawatts of power and contribute to three percent of Brazil's energy. Angra 3, which will be co-located with the two existing reactors, will add 1,200 megawatts. State-owned Eletronuclear, which is a subsidiary of Eletrobras, currently operates Angra 1 and Angra 2 and will be responsible for Angra 3 as well. Financing of Angra 3 is estimated at USD 1.8 billion, and the GOB is still seeking a strategic partner to assist in financing the reactor. On July 23, Environment Minister Carlos Minc placed conditions on granting the licenses for the construction of Angra 3 through the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). According to Dr. Laercio Vinhas, Director of the Radiation Protection and Nuclear Safety Directorate of the Brazilian National Nuclear Energy Commission (CNEN), CNEN is confident that Minc's conditions will not interfere with the construction of Angra 3. The preliminary IBAMA license number 279 imposed 60 conditions for the construction of Angra 3, with the most salient being the disposition of nuclear waste. At the end of September, IBAMA finally gave permission to start construction. CNEN, which licenses and oversees the operation of reactors, had given permission for construction of Angra 3 years ago at the time it approved Angra 2 in the 1990's.

14. (SBU) The GOB has announced its plans to expand the number of nuclear reactors in Brazil by 2014. By that date, the GOB has said publicly that it intends to expand its nuclear energy production to make up five percent of Brazil's energy matrix. Dr. Vinhas of CNEN believes this will require the construction of four to eight reactors, depending on projected economic growth and energy demand. In separate meetings with Acting Deputy Secretary of Energy Jeffrey Kupfer and DCM Lisa Kubiske, Deputy Minister of Mines and Energy Marcio Zimmermann said that Brazil is planning to build four to six new plants and that Brazil wants American involvement in building

the new plants. He recalled that Westinghouse had originally been involved in building the first Brazilian plant and that Brazil was eager to see U.S. firms reengage. (NOTE: There already is some bilateral commercial interaction taking place in the nuclear field. Marcelo M. Susini Ribeiro, advisor to the director of Nuclear Fuel Production at Brazilian Nuclear Industries (INB), the civilian company that runs Brazil's current enrichment facility at Resende near Rio de Janeiro, told Econoff that his Director, Samuel Fayad Filho, travelled to Pittsburgh September 24 - 28 for meetings with Westinghouse. END NOTE.)

15. (SBU) For the longer-term, i.e., the period after 2014, the GOB is considering bringing on even more reactors. Minister of Mines and Energy Edison Lobao was quoted by Brazilian newspapers as suggesting that Brazil would build 50 or 60 nuclear reactors by 2030. This proposal was dismissed by CNEN as unfeasible and unnecessary. Moreover, Environment Minister Minc - a staunch anti-nuclear activist - said that Lobao was expressing only his personal opinion and not the view of the government. Eletronuclear, however, has submitted a study to President Luiz Inacio Lula da Silva to urge that the large-scale expansion of Brazil's nuclear energy infrastructure commence soon. If Eletronuclear is to meet its target of generating six gigawatts of nuclear power by 2030, as called for in Brazil's National Energy Plan 2030- which specifies that 6,000 megawatts of nuclear energy be available by that date, it believes that construction must begin right away. Thus far, four states in the northeast have expressed interest in housing the future power plants, including Bahia, Sergipe, Alagoas and Pernambuco. Press reports indicate that the GOB is looking at proposals to build six new reactors of 1,000 megawatts generating capacity, and sites in the southeast of Brazil are being considered for new plants. Projections indicate construction on the first two

BRASILIA 00001354 002 OF 003

northeast reactors might begin by 2019 and 2021, with the southeast ones by 2023 and 2025. Energy Minister Lobao has stated that Brazil would need 50,000 to 60,000 megawatts of nuclear capacity by 2050, which could explain his comment on the need for 50 to 60 nuclear power plants.

IMPROVING NUCLEAR REGULATION AND OVERSIGHT

6 (SBU) The Ministry of Mines and Energy has announced its intention to break up the national monopoly on the construction and operation of nuclear reactors to lower the costs involved. The nuclear monopoly is written in Brazil's constitution, but an amendment delivered to the Chamber of Deputies in September 2008 would allow private companies to work with nuclear generation. The Ministry of Science and Technology, however, does not support the change, citing concerns over the strategic nature of nuclear power.

17. (SBU) Dr. Vinhas of CNEN said that later this month (October 2008), a committee of 11 ministries will meet to discuss the creation of a separate nuclear regulatory agency. The creation this ministerial group, called the Committee for the Development of Brazil's Nuclear Program, is coordinated through the President's Office (Planalto) and will respond to the perceived increased demand for regulation of an expanding nuclear energy program. Currently, CNEN both regulates and plays a role in managing the two nuclear reactors and other small-scale nuclear activities. Dr. Vinhas commented that this arrangement might have worked satisfactorily with a small nuclear program, but with Brazil's ambitious expansion plans, a separate regulatory body makes more sense now. Of note, the GOB has more than doubled CNEN's budget between 2003 and 2008, from Reals 70 million to Reals 150 million (about USD 70 million).

BRAZIL-ARGENTINA NUCLEAR COOPERATION

18. (SBU) In March 2008 Brazil and Argentina announced the formation of a bilateral Nuclear Energy Commission (COBEN), and stated their intention to create a joint state company (EBEN) that will develop compact nuclear reactors and enrich uranium. While Brazil is willing to work with Argentina and possibly other countries on nuclear energy, it appears that the GOB remains unwilling to share technology for uranium enrichment that it has developed. Dr. Vinhas of CNEN says that the Brazilian and Argentine technologies don't

match well; Brazil pursues light water technology and Argentina is similar to the Canadian approach and uses heavy water. In addition, press reports indicate that the Brazilian Navy is adamantly opposed to technology transfer to Argentina through this joint endeavor. Further, Brazilian Nuclear Industries (INB), the civilian company that runs Brazil's current enrichment facility at Rezende, near Rio de Janeiro, does not have access to the Navy's enrichment technology, which has been developed at the Navy's research center at Aramar, located at Ipero. Aramar's principal project today is the construction of a nuclear powered submarine.

NUCLEAR FUEL AND ENRICHMENT

¶9. (SBU) Brazil has the world's sixth largest reserve of uranium. Its actual uranium reserves could be much higher as only 30 percent of its territory has been prospected. Based on the present calculated reserve of 500,000 tons, Brazil would have enough uranium for 250 years of operation of six reactors. Nonetheless, Brazil currently goes through foreign companies, such as Urenco, to obtain fuel-grade uranium for its nuclear facilities. Dr. Vinhas of CNEN reports that the GOB plans to install in Aramar a plant to transform yellow cake into UF gas. This is presently done for Brazil in Canada, and the enrichment is done in Europe through Urenco. The GOB wants to obtain self-sufficiency in the production of fissile fuel for all of Brazil's nuclear reactors by 2014. Dr. Vinhas states that Brazil has no current plans to export surplus enriched fuel, and will instead keep its surplus as a strategic reserve.

NUCLEAR WASTE

¶10. (SBU) Environment Minister Minc initially stated that he would not grant an operational license for Angra 3 unless a proper disposal method for nuclear waste was under construction. However, condition 2.18 of license 279 from IBAMA had different wording, indicating that it was necessary for Eletronuclear to present a proposal and initiate execution of the approved project for the final disposition of nuclear waste before the initiation of operation of Angra 3. There has been some confusion over the differences between the terms execution and construction as used in the license. The GOB plans to begin the nuclear waste disposal project in 2014, and construction will begin in 2019, with conclusion in 2026. It is still unclear what the nuclear waste solution will be. CNEN has stated that Brazil's nuclear program does not have the financial means or any reason to reprocess nuclear

BRASILIA 00001354 003 OF 003

fuel today, and that it lacks technology to separate plutonium for weaponry. Dr Vinhas said that highly radioactive nuclear waste will continue to be stored in the interior pools of each plant in Angra, where it will remain for 10 years for cooling. An external pool will be build by 2022, when the internal reserves of Angra 1 and Angra 2 will be full. CNEN believes the pool to be the best solution, and that pools are usable for the life of the reactor, or circa 60 years. As Angra 3 will begin operation in 2015, CNEN foresees disposal becoming an issue only in 2075.

COMMENT

¶11. (SBU) After years of inactivity, the GOB is seeking to reactivate old projects and launch new ones in the civilian nuclear energy field. Construction of the country's third reactor (Angra 3) should begin shortly, and now the GOB is looking at other aspects, such as producing its own fuel from its rich supplies of uranium. At the same time, the government is trying to put its regulatory house in order with a new oversight agency separated from management. Talk of cooperation with Argentina has not progressed far and obstacles lie in its way. GOB looks well-placed to expand its civilian nuclear energy sector if it can overcome some significant hurdles, with financing at the top of the list. In the past Brazil has struggled to take major infrastructure ideas from the drawing board and bring them to fruition. The GOB's current nuclear energy plans offer opportunities for both expanded government cooperation on the regulatory and management front, as well as business opportunities for private sector.

SOBEL